

REMARKS

Claims 18-22 and 63-70 have been amended. No new matter has been introduced. Applicants reserve the right to pursue the original claims in this or other applications.

Claims 18-22 and 63-70 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Glenn (U.S. Appl. Pub. No. 2001/0014486) in view of Chia (U.S. Patent No. 6,225,695). The rejection is respectfully traversed.

The claimed invention generally relates to die packages having an adhesive flow restriction area. As such, claim 18 recites an imaging device, comprising “a die having a first surface containing an array of imaging elements; and a transparent element adhesively attached to the die by an adhesive material and having a first surface facing the first surface of the die, the first surface of the die having at least one adhesive flow restriction area for impeding flow of an adhesive across the first surface of the die, wherein the adhesive flow restriction area comprises at least one trench.”

The references of record, alone or in combination, fail to disclose, teach, or suggest each and every limitation of claim 18. As discussed in previous responses filed by Applicants, Glenn does not disclose, teach, or suggest a “first surface of [a] die having at least one adhesive flow restriction area for impeding flow of an adhesive across the first surface of the die, wherein the adhesive flow restriction area comprises at least one trench,” as recited by claim 18. Indeed, unlike the claimed invention, FIG. 19 of Glenn relates to an “encapsulant locking feature” [0095], having a groove 90 which “increases the surface area of cover 89 in contact with bead 48, and thereby strengthens the connection between cover 89 and bead 48 and package 30.” Glenn’s groove 90, however, does nothing to restrict the flow of the adhesive in either direction on the die. Additionally, Glenn’s groove 90 is located in its cover 89, not, as claimed, on a “first surface of [a] die.”

Admitting that Glenn fails to disclose, teach, or suggest each and every limitation of claim 18, the Office Action attempts to combine Glenn with Chia.

Chia relates to a grooved semiconductor die for flip-chip heat sink attachment. *See* Chia's Title. According to Chia, its semiconductor die (shown in FIG. 3) "is provided with a number of grooves 316 formed in the non-active surface." Chia at 4:26-28. "The grooves 316 increase the surface area of contact on the back of the die 310 for the adhesive [308]." *Id.* at 4:28-29. Chia fails to disclose, teach, or suggest a "first surface of [a] die having at least one adhesive flow restriction area for impeding flow of an adhesive across the first surface of the die, wherein the adhesive flow restriction area comprises at least one trench," as recited by claim 18. Indeed, the purpose of Chia's grooves is very different from the purpose of claim 18's "adhesive flow restriction area"; Chia's grooves increase the surface area of the non-active surface of the die, and, according to Chia, increase the "thermal conductivity of the heat transfer path between semiconductor die 301 and heat sink 304." *Id.* at 4:34-36. Chia's grooves, however, do nothing to restrict the flow of the adhesive in either direction on the die.

Even if Chia were combinable with Glenn, which Applicants do not concede, Chia explicitly teaches that its grooves be formed on the non-active side of the die, or, as shown in Glenn's FIG. 21, a second surface 46 of the optical device 23. The alleged combination fails, however, to disclose, teach, or suggest a "first surface of [a] die having at least one adhesive flow restriction area for impeding flow of an adhesive across the first surface of the die, wherein the adhesive flow restriction area comprises at least one trench," as recited by claim 18.

For at least these reasons, Applicants respectfully submit that claim 18 is allowable over the references, and request that the rejection be withdrawn. Claims 19-22 and 63-70 depend from claim 18, and are allowable on their own merits. For example, claim 20 recites the imaging device of claim 19 (which depends from claim 18), "wherein the at least one trench creates a perimeter around the array of imaging elements." None of the references contemplate a trench that "creates a perimeter around the array of imaging elements." Indeed, the Office Action fails to address the

limitations of claim 20. Claim 21 recites the imaging device of claim 20, "further comprising a second trench creating a perimeter around the at least one trench." None of the references contemplate a "second trench creating a perimeter around the at least one trench," as recited by claim 21. Indeed, the Office Action fails to address the limitations of claim 21 as well. The Office Action fails to address each and every limitation of claims 19-22 and 63-70.

For at least these reasons, Applicants respectfully submit that claims 19-22 and 63-70 are allowable over the references of record, and request that the rejection be withdrawn.

In view of the above, Applicants believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1073, under Order No. M4065.1005/P1005.

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Respectfully submitted,

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